

# UNITED STATES PATENT AND TRADEMARK OFFICE

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Mail Stop APPEAL BRIEF - PATENTS  
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/Aurora Lowell /

## CORRECTED APPEAL BRIEF

This communication is responsive to the Notification of Non-Compliant Appeal Brief mailed on October 12, 2010. No fee is believed to be necessary. Should any fee be required, the Commissioner is authorized to charge our Deposit Account No. 06-0029 and notify us of the same.

Please replace the "Summary of Claimed Subject Matter" and the first portion of "Grounds of Rejection to be Reviewed on Appeal" and the "Argument" with the following:

### 5. **SUMMARY OF CLAIMED SUBJECT MATTER**

The claims are directed to honey compositions comprising a specific percentage of natural honey and an extender molecule, where the composition comprises natural honey and a selected extender. Elements of the specific claims are supported by the text and Examples of the Specification, at least at the locations in the specification indicated in the attached Table of Support.

Support for each of the rejected independent claims 39, 41, and 52 and for the added elements of the dependent claims is described below:

### **Independent Claim 39**

39. **A honey composition comprising:**

(a) about 40 to about 65 weight percent of natural honey; and (b) about 35 to about 50 weight percent of an extender selected from the group consisting of a C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof; and wherein honey present in the composition consists of natural honey and **contains no added fructose**; and wherein the taste, color, and viscosity of the honey composition approximates that of the natural honey.

The elements of independent claim 1 include:

1. about 40-65 wt% natural honey
2. about 35-50 wt% extender (selected from those recited in the claim)
3. requires the composition to contain no added fructose
4. and requires the composition to have taste, color, and viscosity approximating that of natural honey.

Support for these elements can be found throughout the specification including the examples and original claims, as shown in the claim element table below.

#### **1. 40-65 wt% natural honey**

The recited range of 40-65 wt % of honey is supported at least in the specification text at page3, lines 5-10:

Preferably, the composition of the present invention contains at least 40% by weight of natural honey, and approximately 35 to approximately 50 % of an extender molecule. [Assuming a 100 wt% composition containing 35% extender, the natural honey can be at least 40 wt% and no more than 65 wt% (100% - 35% = 65%).]

#### **2. 35-50 wt% extender molecule**

Support for the recited range of about 35-50 wt% of an extender selected from the group of extender molecules recited in the claim can be found, for example, at least in the paragraph recited above, in the Summary of the invention at page 2, and in the description of specific extender molecules and their sources at page 3, beginning at line 15, where exemplary extender

molecules are recited: raffinose and stachyose (with defatted soybean meal as an exemplary source), polyols of 2-6 carbons, with sorbitol disclosed as a preferred polyol, and dietary fiber including oat bran and psyllium seed. The Examples disclose compositions comprising natural honey and these extender molecules:

Example 1 combines 50% natural honey with 35, 39, 41, and 50% of sorbitol,  
Example 2 combines 50% natural honey with 40% defatted soy flakes, a source of raffinose and stachyose, and 10 wt% water. Example 3 combines 50 wt% of natural honey with 40 wt% of the dietary fiber oat bran and 10 wt% water.  
Example 4 combines 50 wt% natural honey with 40 wt% of the dietary fiber psyllium seed and 10 wt% water. Example 5 combines 50% natural honey with 35-41 wt percent of polydextrose, and compares these compositions to a composition comprising 70 wt% polydextrose and no honey.

### **3. no added fructose**

Support for the claim recitation “no added fructose” is also found throughout the specification and Examples. In the Examples discussed above, the compositions were made with three ingredients: natural honey, one of the recited non-metabolizable or slowly-metabolizable extender molecules, and water.

It is commonly known and is disclosed in the Background at page 1, lines 17-21, that natural honey contains fructose and glucose, two sugars that are readily metabolizable when consumed by humans. The Summary of the Invention at page 2, lines 18-20 describes the composition provided to be “low in total sugar content... as compared with natural honey.” The extender molecules are stated in the Summary at lines 23-25, to be “slowly-metabolized as compared with sugars or non-metabolized in the human digestive system”. The specific extender molecules are listed at pages 3-4. The specification at page 4, lines 7-12 states:

The compositions of the present invention are reduced in sugar, including both glucose and fructose content, as compared with natural honey. Preferably, the compositions contain less than 25% by weight of glucose and fructose...

**4. taste, color, and viscosity approximating natural honey.**

In each of the Examples, as discussed above, extended honey compositions produced as claimed with natural honey, an extender, and water, exhibited organoleptic properties, including color, viscosity, taste, and texture, approximating that of natural honey.

**Independent Claim 41**

**41. A honey composition comprising:**

- (a) about 40 to about 65 weight percent of natural honey; and
- (b) about 35 to about 50 weight percent of an extender selected from the group consisting of a C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof; wherein honey present in the composition consists of natural honey, and wherein the composition **comprises less than 25% fructose**.

Independent claim 41 contains some of the same elements as independent claim 39, but differs in the limitation of fructose in the composition. The elements of independent claim 41 include:

1. about 40-65 wt% natural honey
2. about 35-50 wt% extender (selected from those recited in the claim)
3. requires the composition to have taste, color, and viscosity approximating that of natural honey.
4. **composition comprises less than 25% fructose.**

For sake of brevity, discussion of the natural honey, extender, and organoleptic elements is not repeated, but is stated to be the same as that disclosed for independent claim 39. Support for the requirement that the composition comprise less than 25% fructose is also found in the specification and examples. For example, the specification at page 4, lines 7-12 states:

The compositions of the present invention are reduced in sugar, including both glucose and fructose content, as compared with natural honey. Preferably, the compositions contain less than 25% by weight of glucose and fructose...

The amount of these sugars found in natural honey [100 wt% natural honey] is disclosed in the specification at Page 1 lines 15-16 to be approximately 38.5% fructose and 31.0% glucose.

The Examples disclose compositions formed by mixing 50 wt% natural honey, and 50 wt% of the extended molecule and water. A product consisting of only 50 wt% natural honey would therefore contain less than 25 wt% of glucose and less than 25 wt% of fructose.

#### Independent Claim 52

52. A honey composition comprising: about 50% natural honey, about 40% of an extender selected from the group consisting of a C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof; and about 10% water.

Independent claim 52 requires the following elements that are disclosed in the Table of Elements below and in the specification, including in the working examples:

1. about 50 wt% natural honey
2. about 40 wt% extender (selected from those recited in the claim)
3. about 10% water

Each of these elements working examples discloses at least one honey composition made by mixing an extender molecule and water in a ratio of 4 parts extender to one part water. To this mixture is added an equal mass of natural honey, creating a composition that contains 50 wt% natural honey, 40 wt% extender molecule, and 10 wt% water.

#### SUMMARY OF SUPPORT FOR CLAIM ELEMENTS

Claim	Element	Page, Line	Quote from text of specification
39, 41, 42, 45, 52	A honey composition	P2, L18-25	The honey compositions of the present invention contain natural honey and approximately 35-50% by weight of an extender molecule ...
39, 41, 42, 45	about 40-65%	P3, L 4-7	Preferably...at least 40% by weight of natural honey, and approximately 35% to approximately 50% of an extender molecule.
52	about 50%	P3, L7-10 P7, Table I	... the product is comprised of approximately 50% honey... Example 5, 50% honey

Claim	Element	Page, Line	Quote from text of specification
39, 41, 42, 45, 52	natural honey	P2, L18-25	The honey compositions ... contain <b>natural honey</b>
39, 41, 42, 45	about 35-50%	P2, L18-25	...contain natural honey and approximately <b>35-50%</b> by weight of an extender molecule ...
52	about 40%	P3, L 4-7	Preferably... <b>at least 40%</b> by weight of natural honey
39, 41, 42, 45, 52	extender	P2, L18-25	The honey compositions ... contain natural honey and approximately 35-50% by weight of an <b>extender molecule</b> ...
39, 41, 42, 45, 52	Raffinose, stachyose, C2-6 polyol, non-metabolizable dietary fiber, and mixtures thereof	P3, L15-P4, L6 P3, L19 P3, L29 P4, L3-4  P3, L17-18	The extender molecule may be... Raffinose...Stachyose... Polyols of 2-6 carbons... Dietary fiber..a non-metabolizable... or a mixture thereof.
52	about 10% water	P4, L13-16 Ex. 1-5	The low-sugar honey compositions of the present invention may be produced by dissolving an extender molecule in <b>water</b> , adding natural honey, and heating to a boil while stirring. Examples add extender to water then add honey to make the composition.
39, 41, 42, 45, 52	honey is natural honey	P2, L18-25	The honey compositions of the present invention contain <b>natural honey</b> ...
39, 52	no added fructose	P4, L7-12	The compositions ... are <b>reduced in sugar, including both glucose and fructose content</b> , as compared with natural honey.
39	taste, color, and viscosity approximate that of the natural honey	P5, L9-11, Example 1	The color, viscosity, flavor, and texture of the extended honey composition approximated that of the <b>original</b> light amber honey.
41, 42, 45	composition comprises less than 25% fructose	P4, L9-12	Preferably, the compositions contain <b>less than 25%</b> by weight of glucose or <b>fructose</b> ...

Claim	Element	Page, Line	Quote from text of specification
42, 45	consists of natural honey	P4, L13-16	adding natural honey
42, 45	less than 25% glucose	P4, L9-12	less than 25% by weight of glucose
45	pH of about 4	P5-6, Ex2, 3, 4	Extender in water acidified to pH4 and then honey added [natural honey has pH about 4]

#### **6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

***Ground of Rejection 1:*** Whether claim 39 is obvious under 35 U.S.C. § 103(a) over Japanese Patent to Shimizu et. al., Patent No. JP 01-181751 ("Shimizu" or "the Shimizu patent") in view of Staub et.al., U.S. Patent No. 4379782 ("Staub" or "the Staub patent").

***Ground of Rejection 2:*** Whether claim 41 is obvious under 35 U.S.C. § 103(a) over Japanese Patent to Shimizu et. al., Patent No. JP 01-181751 ("Shimizu" or "the Shimizu patent") in view of Staub et.al., U.S. Patent No. 4379782 ("Staub" or "the Staub patent").

***Ground of Rejection 3:*** Whether claim 42 is obvious under 35 U.S.C. § 103(a) over Japanese Patent to Shimizu et. al., Patent No. JP 01-181751 ("Shimizu" or "the Shimizu patent") in view of Staub et. al., U.S. Patent No. 4379782 ("Staub" or "the Staub patent").

***Ground of Rejection 4:*** Whether claim 52 is obvious under 35 U.S.C. § 103(a) over Japanese Patent to Shimizu et. al., Patent No. JP 01-181751 ("Shimizu" or "the Shimizu patent") in view of Staub et. al., U.S. Patent No. 4379782 ("Staub" or "the Staub patent").

***Ground of Rejection 5:*** Whether claim 45 is obvious under 35 U.S.C. § 103(a) over Japanese Patent to Shimizu et al., Patent No. JP 01-181751 ("Shimizu" or "the Shimizu patent") in view of Staub et al., U.S. Patent No. 4379782 ("Staub" or "the Staub patent").

**ARGUMENT**

**Ground of Rejection 1: Rejection of Claim 39 Under 35 U.S.C. § 103(a) over Schimizu in view of Staub**

Independent claim 39 recites a honey composition comprising about 40 to about 60 wt% of natural honey and about 35 to 50 wt% of an extender molecule selected from a C2-6 polyol, farinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof. The claim specifies that the honey in the composition is **natural** honey and contains no added fructose. The taste, color, and viscosity of the composition approximate that of the natural honey.

Page	Lines	Claim 39 Elements
3	4-7	Preferably...at least 40% by weight of natural honey, and approximately 35% to approximately 50% of an extender molecule.
3-4	15 +	The extender molecule may be... raffinose... stachyose... polyols of 2-6 carbons... dietary fiber...a non-metabolizable... or a mixture thereof.
4	7-12	The compositions ... are reduced in sugar, including both glucose and fructose content, as compared with natural honey.
5	9-11, Examples 1-5	The color, viscosity, flavor, and texture of the extended honey composition approximated that of the original light amber honey.

The Examiner's rejection is premised on a substitution of the claimed natural honey for the bleached, deodorized, and refined honey product disclosed in Shimizu. In contrast to the Examiner's characterization of the cited reference, Shimizu fails to disclose or suggest the claimed honey compositions, but rather teaches away from the claimed combination of natural honey and extender molecules.

The claimed compositions contain only natural honey, in an amount that is at least 40% of the final composition. A slowly- metabolizable or non-metabolizable extender molecule is added to reduce the sugar content of the composition, and in an amount that enables the final honey composition to approximate the organoleptic properties of natural honey.

In contrast to the claimed honey composition, the cited reference requires a blend of “pure bleached and deodorized” honey with “pure” honey and with an “easily digestable fructooligosaccharide”. These elements contained in the compositions disclosed in Shimizu are contrary to the requirements of the claim and the purpose of the claimed invention.

The cited reference does not utilize 50% natural honey in the disclosed compositions, but only discloses that the total amount of honey cannot exceed 50%: “..if the amount of pure honey exceeds 50%, the pH value of the honey is lowered, and not only the effects of the oligosaccharides are suppressed, but also by heating the quality of the honey may change and the oligosaccharides decompose.” (Page 6, first full paragraph, lines 6-12).

At page 4 of the translation, Shimizu discloses “making a mixture of pure honey bleached and deodorized by activated charcoal” [pure, bleached honey] with pure honey and adding oligosaccharides to the mixture. At page 5, the reference explains that the use of “pure honey” in the composition reduces the pH, impacting the properties of the honey, including stability, and that the “ratio” of “pure honey” to refined (bleached, deodorized) honey must be less than 50% to avoid reducing the pH. This teaches away from the instant invention which requires only natural honey, and exemplifies compositions retaining the pH of natural honey, pH4 (See Examples 1-5).

In contrast to the instant invention, the exemplified compositions of Shimizu all contain refined (bleached, deodorized) honey. The demonstrated compositions include 0% “pure” honey, 83% refined (deodorized, bleached) honey, and 17% FOS (Example 1) or 18% “pure honey”, 73% refined honey, and 9% FOS (Example 2).

At least because Shimizu teaches that honey compositions should be limited in the amount of natural honey contained and requires honey compositions to contain refined (bleached deodorized) honey to stabilize the composition and prevent reduced pH, the reference teaches away from the claimed invention, which requires only natural honey and requires properties of the composition to approximate that of natural honey.

The secondary reference, *Staub* does not disclose any honey compositions. *Staub* discloses products containing polysaccharides or polyols “in excess of 10% by dry weight” and does not disclose honey products. In contrast, *Staub* discloses that polysaccharides and polyols induce diarrhea because they are not metabolized, and use of such fibers renders foods undesirable with some exceptions (See *Staub* Column 3, lines 27-37).

Accordingly Claim 39 is not taught or suggested by the primary reference, *Shimizu*, alone or in combination with the secondary reference, *Staub*.

**Ground of Rejection 2: Rejection of claims 41 Under 35 U.S.C. § 103(a) Over Shimizu in view of Staub.**

Independent claim 41 recites a honey composition comprising about 40 to about 65 weight percent of natural honey; and about 35 to about 50 weight percent of an extender selected from the group consisting of a C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof, where honey present in the composition consists of natural honey and the composition comprises less than 25% fructose. All elements of the claim are supported by the specification, at least at the positions shown below.

Page	Lines	Claim 41 Elements
2	20-25	40 to about 65 weight percent of natural honey;
7	20	
2	20-25	about 35 to about 50 weight percent of an extender
3	13-35	C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof,
2	20-25	wherein honey present in the composition consists of natural honey, and
4	7-12	wherein the composition comprises less than 25% fructose.

The Examiner's rejection is premised on a substitution of the claimed extender groups for the fructo-oligosaccharides of *Shimizu*; and on the substitution of the claimed natural honey for the refined honey of *Shimizu*. *Shimizu* fails to teach or suggest a honey composition with the claimed amount of natural honey, but rather teaches away from a natural honey composition. *Shimizu* fails to teach or suggest a honey composition comprising the claimed extender molecules that are at most slowly metabolizable to achieve the purpose of the claimed diatetic/diabetic compositions, but rather teaches combining honey with an easily digestible fructooligosaccharide. Neither substitution meets the requirements and purpose of the claimed invention.

*Shimizu* discloses a honey composition that combines "pure" honey with "refined" honey (honey that has been deodorized and bleached). The percentage of "pure" honey cited by the examiner is not 50% of the composition, but is rather the combined weight of both "refined" and "pure" honey in the mixture (*Shimizu* page 6, first full paragraph, lines 6-12). Rather than teaching a product with 50% *natural* honey, *Shimizu* teaches the total amount of "pure" honey cannot exceed 50%: "if the amount of pure honey exceeds 50%, the pH value of the honey is lowered, and not only the effects of the oligosaccharides are suppressed, but also by heating the quality of the honey may change and the oligosaccharides may decompose." (*Id.*)

These calculations are demonstrated by the disclosure, for example, at page 4 of the translation. *Shimizu* teaches "making a mixture of pure honey bleached and deodorized by activated charcoal and 10-50 wt % of pure honey and then adding 10 – 40 wt% of oligosaccharides to the mixture". Assuming maximum pure honey (50 wt %) and the minimum amount of oligosaccharides (10 wt %), the final composition can contain no more than 45 wt % of the pure honey, and given the amount of glucose and fructose naturally present in natural honey, the composition of *Shimizu* does not teach or suggest a final honey product comprising less than 25% fructose.

At page 5 of the translation, *Shimizu* explains mixing refined with pure honey raises the pH to 5, and the high pH impacts the properties of the honey, including stability. At page 6, *Shimizu* explains that the "ratio" of pure honey to refined honey must be less than 50% to avoid reducing pH. *Shimizu* exemplifies compositions comprising 0% pure honey (Example 1) or 18% pure honey (Example 2) and honey compositions comprising 0% natural honey, 83% refined honey and 17% FOS extender (Ex. 1) or 18% natural honey, 73% refined honey, and 9% FOS extender (Ex. 2).

*Shimizu* differs not only in the use of refined honey, but also in the extender molecules utilized. *Shimizu* discloses "... manufacturing and sterilizing oligosaccharide-containing honey, which is obtained by adding fructooligosaccharides to honey, which is **easily digested** and absorbed." (Page 2 of the translated Japanese Patent application). None of the claimed extender

molecules are fructooligosaccharides that are easily digested and absorbed. Such extender molecules go against the purpose and intent of the claimed product, a dietetic or diabetic honey composition that is lower in fructose and glucose than natural honey, but retains the organoleptic properties of natural honey.

As stated in the Response dated August 27, 2008, at least because the claimed honey composition utilizes extender molecules that are not normally present in honey compositions and which are not easily digested in the human digestive system, *Shimizu* cannot predict that a honey composition according to the claims would provide a suitable honey product for use as a dietetic or diabetic honey product. *Shimizu* also teaches against the use of the claimed natural honey, as discussed above, and cannot be said to predict the utility of the claimed natural honey.

The secondary reference, *Staub* does not disclose any honey compositions. *Staub* discloses products containing polysaccharides or polyols "in excess of 10% by dry weight" and does not disclose honey products. In contrast, *Staub* discloses that polysaccharides and polyols induce diarrhea because they are not metabolized, and use of such fibers renders foods undesirable with some exceptions (See *Staub* Column 3, lines 27-37).

Accordingly Claim 41 is not taught or suggested by the primary reference, *Shimizu*, alone or in combination with the secondary reference, *Staub*.

***Ground of Rejection 3: Rejection of Claim 42 Under 35 U.S.C. § 103(a) Over Shimizu in view of Staub***

Independent Claim 42 recites a honey composition comprising about 40 to about 65 weight percent of natural honey, and about 35 to about 50 weight percent of an extender selected from the group consisting of a C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof, where honey present in the composition consists of natural honey and the composition comprises less than 25% fructose, but also limits the composition to comprise less than 25% glucose.

Page	Lines	Claim 41 Elements
2	20-25	40 to about 65 weight percent of natural honey;
7	20	
2	20-25	about 35 to about 50 weight percent of an extender
3	13-35	C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof,
2	20-25	wherein honey present in the composition consists of natural honey, and
4	7-12	wherein the composition comprises less than 25% fructose.

For all the reasons discussed above for claims 39 and 41, Claim 42 is not taught or suggested by the primary reference, *Shimizu*, alone or in combination with the secondary reference, *Staub*.

***Ground of Rejection 4: Rejection of Claim 52 Under 35 U.S.C. § 103(a) Over Shimizu in view of Staub***

Independent claim 52 specifies the honey composition to comprise about 50% natural honey, about 40% of an extender selected from the group consisting of a C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof, also requires the composition to comprise about 10% water.

Page	Lines	Claim 41 Elements
2	20-25	About 50% natural honey;
7	20	
2	20-25	about 40% extender
3	13-35	C2-6 polyol, raffinose, stachyose, non-metabolizable dietary fiber, and mixtures thereof,
7	20	10% water

For all the reasons discussed above for claims 39, 41, and 42, Claim 52 is not taught or suggested by the primary reference, *Shimizu*, alone or in combination with the secondary reference, *Staub*.

***Ground of Rejection 5: Rejection of Claim 45 Under 35 U.S.C. § 103(a) Over Shimizu in view of Staub***

Claim 45 depends from claim 42, and further requires the claimed composition to comprise a pH of about 4.

For all the reasons discussed above for claims 39, 41, 42 and 45, Claim 52 is not taught or suggested by the primary reference, *Shimizu*, alone or in combination with the secondary reference, *Staub*. In addition, *Shimizu* particularly teaches against a honey composition having a reduced pH. In contrast to the cited reference, the claimed invention strives to maintain the properties of natural honey in the extended honey composition, including taste, color, and viscosity. These characteristics are maintained in the compositions described in the specification, particularly in the working examples, where a pH of 4 is maintained in the final compositions.

Claims 39, 41, 42, 45, and 52 are thus patentable over the prior art of record. At least because they depend from claim 42, claims 43-51 are necessarily patentable for the same reasons. The Appellant respectfully requests reversal of the rejections of claims 41-52.

CONCLUSION

The Appellant respectfully requests that the Board reverse the outstanding rejections of the foregoing claims and instruct the Examiner to issue a Notice of Allowance of all pending claims.

Respectfully submitted,

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